

IN THE SPECIFICATION:

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~strikethrough~~.

Please AMEND the following paragraphs as shown:

[0001] This application is related to and claims priority to U.S. provisional application entitled "User Interface Techniques For Pen-Based Computers" having serial number 60/438,499, by Fitzmaurice et al, filed January 8, 2003; this application is related to U.S. application entitled "A User Interface Having A Placement And Layout Suitable For Pen-Based Computers" having serial number ~~**(1252.1087)~~10/748,686, by Fitzmaurice et al, filed ~~concurrently herewith~~December 31, 2003; and this application is related to U.S. application entitled "Biomechanical User Interface Elements For Pen-Based Computers" having serial number ~~**(1252.1088)~~10/748,684, by Fitzmaurice et al, filed ~~concurrently herewith~~December 31, 2003; and all of which are incorporated by reference herein.

[0025] The present invention provides for the use of boxes displayed to represent the ordering of the drawing layers in a paint application. Figure 1 shows a bottom to top ordering of four layers 22-28 where the background layer 28, hand letter named "ground", is at the bottom of the layer editor and subsequent layers are "layered on top over" each other. This vertical ordering represents the underlying ordering of the data structure, such as a pointer directed list implementing a layer stack, that maintains the layers for the particular drawing. The stack entries also contain the parameter data for each of the layers, such as locked/unlocked status, hidden/visible status, layer name bitmap, active, etc. Each layer can be a control that allows a function to be performed, such as display the layer in a one-shot type function or display a menu of operations that can be performed on the layer in a menu access type multiple operation type function. Each layer box displays its name and some state information about the layer (a layer may be hidden or visible, selected or unselected, locked, etc.). For example, layer 24 is the named the "body" layer and is a hidden layer indicated by using a gray overlay to indicate the hidden status. Layer 22 is named the "windows" layer and is also a hidden layer, but it is locked as depicted by the lock icon 30. This icon 30 is typically not a control because it is a very small target; however, the icon 30 could be a control providing a toggle between locked and unlocked. A locked layer cannot be moved. The background layer 28 is a visible layer, as indicated by the

transparent overlay indicator and is also locked. The background layer 28 also preferably has a visual indicator 32, in this case the text "BACKGROUND", indicating that the layer is the background layer. Layer 26 is named the "wheels" layer. Layer 26 is a visible layer. Layer 26 is shown as having been selected by the user by the selection indication frame graphic ~~32-34~~ that has been placed around the layer box 26, thereby highlighting box 26. When a layer is selected, controls specifically for that layer are also presentable. Figure 1 shows a layer move control 36 that allows the layer to be moved up or down in the editor layer stack. A transparency control 38 for the layer allows the user to set the transparency degree for the layer, in this case layer 26. These controls 36 and 38 appear when the layer is selected.

[0026] As noted above, the status icon 30 is preferably not a control. A reason that it is preferred that the lock icon 30 not be a control is the desire to make the target area for the layer control large for easy targeting and activation with a stylus. As a result, the present invention makes the menu target areas large by overlapping status indicators (like the lock icon 30) with the menu target area. In the present invention rather than having the status change or a status related function be activated when the icon is clicked, independent of the function of menu target area (for example, clicking on the lock unlocks the layer), preferably, clicking on the status icon pop-ups of the marking menu of the menu target area. In this way the menu target area includes the status areas and hence is larger and easier to hit.

[0028] To facilitate fast access to multiple functions for each layer, each layer box (or control) preferably has a pop-up menu 50 associated with it as shown in figure 2. To pop-up this menu 50, preferably the user has to press and hold the pen on a layer box and this pops-up a menu of commands that can be applied to the pressed on a-layer. Note that press and hold first selects the layer box so a user does not have to separately click to select the layer, then with the press and hold selection of a particular layer activated, the application or execution/initiation of a command can be done with a single drag action (a mark) through the desired item of the menu, which is a conventional marking menu type selection with the menu visible (or invisible as desired). As discussed above, an aspect of this invention is that the menus can be implemented as conventional "marking menus" where activation of one of the controls via a mark simultaneously selects a corresponding layer and selects an operation on the layer. Other types of pop-up menus could be used, such a traditional linear menus or "pie menus", however, marking menus are particularly suited to pen-based applications because a selection can be

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made very quickly by a simple straight stroke with the pen in the direction of the desired menu item.